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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BURGESS, BARBARA N

ART UNIT PAPER NUMBER

2157

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/934,000

Applicant(s)

NICK, SASCHA

Examiner

Barbara N Burgess

Art Unit

2157

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date September 1, 2001
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Wegerich et al. (hereinafter "Weg", US Patent No 6,202,038 B1).

As per claim 1, Weg discloses a method for remotely monitoring and diagnosing operations of a machine, the method comprising:

detecting signals of one or more of the machine's operating and condition parameters (Abstract, column 5, lines 64-67, column 6, lines 10-15);

comparing the detected signals to a signal model maintained locally with respect to the machine's location and identifying any anomalies in the detected signals compared to the signal model (column 6, lines 27-35, 46-55, column 7, lines 57-67, column 10, lines 32-45);

transmitting information describing each anomaly to a location remote from the machine (column 10, lines 6-20);

diagnosing at the remote location the information describing the anomaly, where the

Art Unit: 2157

diagnosis includes an initial analysis of the information by diagnostic tools maintained at the remote location, a subsequent analysis of the information by diagnostic tools maintained elsewhere if the initial analysis fails to provide a diagnosis and a final analysis by a team of humans aided by a collaborative environment if the initial and subsequent analyses fails to provide a diagnosis (column 12, lines 1-25); reporting the diagnosis of the anomaly to a location capable of attending to repair of the machine (column 10, lines 6-20).

As per claim 2, Weg discloses the method for remotely monitoring and diagnosing operations of a machine as set forth in claim 1 wherein the step of detecting signals of machine operating and condition parameters includes continuously monitoring at least one of the operating parameters and the condition parameters (column 3, lines 20-35).

As per claim 3, Weg discloses the method for remotely monitoring and diagnosing operations of a machine as set forth in claim 1 wherein the signal model is a statistical model based on an initial collection of the detected signals (column 7, column 8).

As per claim 4, Weg further discloses the method for remotely monitoring and diagnosing operations of a machine as set forth in claim 1 wherein the detected signals are derived from a plurality of sensors, the method including the steps of: identifying a failed sensor (column 7, lines 56-67); regenerating the signal model based on remaining sensors (column 9, lines 18-41);

Art Unit: 2157

monitoring the machine based on the remaining sensors and the signal model until the failed sensor is repaired or replaced (column 9, lines 50-67).

As per claim 5, Weg discloses the method for remotely monitoring and diagnosing operations of a machine as set forth in claim 1 wherein the detected signals are derived from a plurality of sensors, the method including the step of generating a sensor replacement signal if the identified anomaly is based on a detected signal from a single sensor such that the replacement signal is substituted into the detected signals as a replacement for the detected signal from the single sensor and the step of comparing includes the step of comparing the detected signals containing the replacement signal to the signal model (column 11, lines 1-30, column 12, lines 10-20).

As per claim 6, Weg discloses the method for remotely monitoring and diagnosing operations of a machine as set forth in claim 1 including the step of adding the diagnosis to the diagnostic tools maintained at the remote location if the diagnosis is provided by one of the diagnostic tools maintained elsewhere and the team of humans (column 13, lines 33-55).

As per claim 7, Weg discloses a local tool positioned proximate a machine for providing an analysis of the machine's operating conditions, where the tool is connected via a communications link to a remote diagnostic tool that diagnoses an anomaly in the operation of the machine when requested by the local tool, the local tool comprising:

Art Unit: 2157

a plurality of sensors connected to the machine for generating information describing the operating condition of the machine (Abstract, column 5, lines 64-67, column 6, lines 10-15);

a processor for receiving the information from the plurality of sensors, the processor including (1) a model of the information assuming normal operation of the machine, (2) instructions for analyzing the information from sensors with respect to the model and generating an exception report when the information from the plurality of sensors does not fit the model (Abstract, column 5, lines 64-67, column 6, lines 10-15, column 7-8);

an interface to the communications link for sending the exception report to the remote diagnostic tool for diagnosis (column 10, lines 6-20).

As per claim 8, Weg discloses the local tool of claim 7 wherein the processor includes a learning mode for generating a model of the normal operation of the machine (column 6, lines 27-35, 46-55, column 7, lines 57-67, column 10, lines 32-45).

As per claim 9, Weg discloses the local tool of claim 8 wherein the local tool includes an interface for putting the processor in the learning mode (column 7, lines 57-67, column 10, lines 32-45).

Art Unit: 2157

As per claim 10, Weg discloses the local tool of claim 8 wherein the interface is a reset button for putting the processor in the learning mode (column 7, lines 57-67, column 10, lines 32-45).

As per claim 11, Weg discloses the local tool of claim 8 wherein the local tool includes a sensor conditioning module for performing signal conditioning on the information from the plurality of sensors (Abstract, column 5, lines 64-67, column 6, lines 10-15, column 7-8).

As per claim 12, Weg discloses a diagnostic tool located remotely from a machine that provides a diagnosis of an anomaly of the machine's operating conditions, where the diagnostic tool is connected via a communications link to a local tool that is located proximate the machine, and the local tool monitors the operating conditions of the machine and identifies the anomalies, the remote diagnostic tool comprising:

a first node on the communications link for diagnosing the anomaly detected by the local tool and instructions for diagnosing the anomaly using diagnostic tools available at the node (column 12, lines 1-25);

additional nodes on the network having access to additional diagnostic tools (column 3, lines 30-45);

an interface between the first node and the additional nodes for communicating the anomaly from the first node to the additional nodes (column 3, lines 30-45);

instructions at the first node for communicating the anomaly to one of the

Art Unit: 2157

additional nodes if the diagnostic tools available at the first node are unable to provide a diagnosis of a cause of the anomaly (column 9, lines 23-40).

As per claim 13, Weg discloses the diagnostic tool of claim 12 wherein the local tool includes two distinctive types of pattern matching libraries (column 3, lines 30-45).

As per claim 14, Weg discloses the diagnostic tool of claim 13 wherein the two distinctive types of pattern matching libraries include libraries for matching systemic and component operating conditions (column 9, lines 1-20, column 10, lines 33-40).

As per claim 15, Weg discloses the diagnostic tool of claim 12 where the instructions at the first node include instructions for communicating the anomaly to an expert system supported by human interaction for diagnosing the anomaly when the diagnostic tools of the first and additional nodes fail to provide a diagnosis (column 11, lines 1-30, column 12, lines 10-20).

As per claim 16, Weg discloses a diagnostic tool located remotely from a machine that provides a diagnosis of an anomaly of the machine's operating conditions, where the diagnostic tool is connected via a communications link to a local tool that is located proximate the machine, and the local tool monitors operating conditions of the machine and identifies the anomalies, the remote diagnostic tool comprising:  
a node on the communications link diagnosing the anomaly detected by the local



Art Unit: 2157

tool (column 12, lines 1-25);

diagnostic tools at the node including a first library of patterns comprising information describing systemic anomalies and a second library of patterns comprising information describing component anomalies (column 3, lines 30-45);

instructions at the node for diagnosing, using the first and second libraries in succession (column 3, lines 30-45).

As per claim 17, Weg discloses the diagnostic tool of claim 16 wherein the node is a first node and the communications link includes a second node that is connected to the first node and receives the anomaly from the first node when the first node fails to diagnose the anomaly, where the second node includes one or more human experts working in a collaborative environment to diagnose the cause of the anomaly (column 11, lines 1-30, column 12, lines 10-20).

As per claim 18, Weg discloses the diagnostic tool of claim 17 wherein the communications link includes a third node that is connected to the first node also receives a diagnosis of the cause, where the third node includes one or more services capable of attending to repair of the machine (column 3, lines 30-45, column 9, lines 25-35).

As per claim 19, Weg discloses the diagnostic tool of claim 17 wherein the communications link includes a fourth node that is connected to the first node and

Art Unit: 2157

receives the anomaly from the first node when the first node fails to diagnose the anomaly, where the fourth node includes instructions for diagnosing the anomaly, and where the second node receives the anomaly from the first node if the fourth node fails to diagnose the anomaly (column 3, lines 45-57, column 5, lines 41-55).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No 6,240,372 B1

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (571) 272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Ettinene can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2157

receives the anomaly from the first node when the first node fails to diagnose the anomaly, where the fourth node includes instructions for diagnosing the anomaly, and where the second node receives the anomaly from the first node if the fourth node fails to diagnose the anomaly (column 3, lines 45-57, column 5, lines 41-55).

### **Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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PRIMARY EXAMINER